

AMENDMENTS TO THE CLAIMS

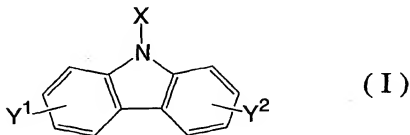
This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A liquid crystal alignment treating agent to obtain an alignment film for nematic liquid crystal by rubbing treatment after forming a coating film, ~~characterized in that it comprises~~ comprising:

at least one polymer selected from the group consisting of

(i) a polyamic acid obtained by reacting one or more tetracarboxylic dianhydrides with one or more diamines comprising at least one diamine having a structure represented by the following formula (I), and

(ii) a polyimide obtained by cyclodehydration of such a polyamic acid[[:]]

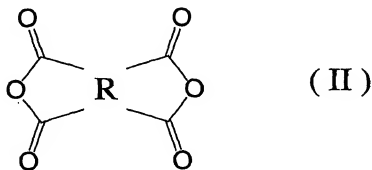


wherein X is a hydrogen atom or a monovalent organic group, and each of Y¹ and Y² is a primary amino group or a monovalent organic group having one primary amino group.

Claim 2 (Original): The liquid crystal alignment treating agent according to Claim 1, wherein the diamine having a structure represented by the formula (I) is 3,6-diaminocarbazole.

Claim 3 (Original): The liquid crystal alignment treating agent according to Claim 1, wherein said one or more tetracarboxylic dianhydrides are one or more tetracarboxylic

dianhydrides comprising at least one tetracarboxylic dianhydride represented by the following formula (II):



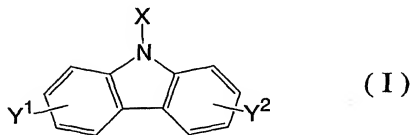
wherein R is a tetraivalent organic group having an alicyclic structure.

Claim 4 (Original): A liquid crystal display device obtained by applying the liquid crystal alignment treating agent as defined in any one of Claims 1 to 4 to a pair of substrates having electrodes, to form coating films, rubbing the coating film surfaces to form liquid crystal alignment films, and sandwiching nematic liquid crystal between the liquid crystal alignment films formed on the pair of substrates.

Claim 5 (New): A rubbed liquid crystal alignment film, comprising:

at least one polymer selected from the group consisting of

(i) a polyamic acid obtained by reacting one or more tetracarboxylic dianhydrides with one or more diamines comprising at least one diamine having a structure represented by the following formula (I)



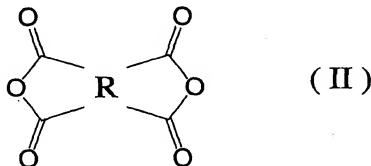
wherein X is a hydrogen atom or a monovalent organic group, and each of Y¹ and Y² is a primary amino group or a monovalent organic group having one primary amino group; and

(ii) a polyimide obtained by cyclodehydration of said polyamic acid;

wherein said rubbed liquid crystal alignment film is capable of aligning a nematic liquid crystal.

Claim 6 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the diamine having a structure represented of the formula (I) is 3,6-diaminocarbazole.

Claim 7 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein said one or more tetracarboxylic dianhydrides are one or more tetracarboxylic dianhydrides comprising at least one tetracarboxylic dianhydride represented by the following formula (II):



wherein R is a tetravalent organic group having an alicyclic structure.

Claim 8 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the monovalent organic group X is a C₁₋₂₀ alkyl group, a C₁₋₂₀ alkenyl group, a

cycloalkyl group, a phenyl group, a biphenyl group, a terphenyl group or a combination thereof.

Claim 9 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein a C₆₋₂₀ alkyl group, a cycloalkyl group or a fluoroalkyl group is at the N-position of the carbazole structure.

Claim 10 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the diamine is selected from the group consisting of 1,5-diaminocarbazole, 1,6-diaminocarbazole, 1,7-diaminocarbazole, 1,8-diaminocarbazole, 2,5-diaminocarbazole, 2,6-diaminocarbazole, 2,7-diaminocarbazole, 3,5-diaminocarbazole, 3,6-diaminocarbazole, 4,5-diaminocarbazole and mixtures thereof.

Claim 11 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the diamine of formula (I) is combined with an aromatic diamine, alicyclic diamine, aliphatic diamine, a silicon diamine or mixtures thereof.

Claim 12 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the diamine of formula (I) is combined with an diamine selected from the group consisting of p-phenylenediamine, m-phenylenediamine, 2,5-diaminotoluene, 2,6-diaminotoluene, 4,4'-diaminobiphenyl, 3,3'-dimethyl-4,4'-diaminobiphenyl, 3,3'-dimethoxy-4,4'-diaminobiphenyl, diaminodiphenylmethane, diaminodiphenyl ether, 2,2'-diaminodiphenylpropane, bis(3,5-diethyl-4-aminophenyl)methane, diaminodiphenylsulfone, diaminobenzophenone, diaminonaphthalene, 1,4-bis(4-aminophenoxy)benzene, 1,4-bis(4-aminophenyl)benzene, 9,10-bis(4-aminophenyl)anthracene, 1,3-bis(4-

aminophenoxy)benzene, 4,4'-bis(4-aminophenoxy)diphenylsulfone, 2,2-bis[4-(4-aminophenoxy)phenyl]propane, 2,2-bis(4-aminophenyl)hexafluoropropane, or 2,2-bis[4-(4-aminophenoxy)phenyl]hexafluoropropane, bis(4-aminocyclohexyl)methane, or bis(4-amino-3-methylcyclohexyl)methane, 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane, or 1,6-diaminohexane, 1,3-bis(3-aminopropyl)-1,1,3,3-tetramethyldicyclohexane and mixtures thereof.

Claim 13 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the diamine is selected from the group consisting of a diamine having an alkyl group, a fluoroalkyl group, a steroid skeleton or a combination thereof in its side chain.

Claim 14 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein a proportion of the tetracarboxylic dianhydride represented by the formula (II) based on all tetracarboxylic dianhydrides to be used for the specific polymer, is from 20 to 100 mol%.

Claim 15 (New): The rubbed liquid crystal alignment film according to Claim 5, wherein the tetracarboxylic dianhydrides represented by the formula (II) are dianhydrides of 1,2,3,4-cyclobutanetetracarboxylic acid, 1,3-dimethyl-1,2,3,4-tetracarboxycyclobutane, 1,2,3,4-cyclopentane tetracarboxylic acid, 1,2,4,5-cyclohexane tetracarboxylic acid, 2,3,5-tricarboxycyclopentyl acetic acid, 3,4-dicarboxy-1,2,3,4-tetrahydro-1-naphthalene succinic acid, bicyclo[3,3,0]octane-2,4,6,8-tetracarboxylic acid, pyromellitic acid, 2,3,6,7-naphthalene tetracarboxylic acid, 1,2,5,6-naphthalene tetracarboxylic acid, 1,4,5,8-naphthalene tetracarboxylic acid, 2,3,6,7-anthracene tetracarboxylic acid, 1,2,5,6-anthracene tetracarboxylic acid, 3,3',4,4'-biphenyl tetracarboxylic acid, 2,3,3',4'-biphenyl

tetracarboxylic acid, bis(3,4-dicarboxyphenyl) ether, 3,3',4,4'-benzophenone tetracarboxylic acid, bis(3,4-dicarboxyphenyl)sulfone, bis(3,4-dicarboxyphenyl)methane, 2,2-bis(3,4-dicarboxyphenyl)propane, 1,1,1,3,3,3-hexafluoro-2,2-bis(3,4-dicarboxyphenyl)propane, bis(3,4-dicarboxyphenyl)dimethylsilane, bis(3,4-dicarboxyphenyl)diphenylsilane, 2,3,4,5-pyridine tetracarboxylic acid and 2,6-bis(3,4-dicarboxyphenyl)pyridine, 1,2,3,4-butane tetracarboxylic acid and mixtures thereof.

Claim 16 (New): The rubbed liquid crystal alignment film according to Claim 5, further comprising a silane coupling agent.

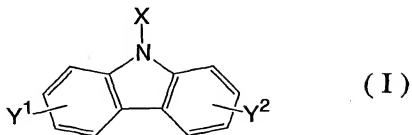
Claim 17 (New): The rubbed liquid crystal alignment film according to Claim 5, having a thickness of from 5 to 300nm.

Claim 18 (New): A liquid crystal device, comprising:
a pair of substrates having electrodes,
a rubbed liquid crystal alignment film on each of the substrates, and
a nematic liquid crystal sandwiched between the rubbed liquid crystal alignment films;

wherein said rubbed liquid crystal alignment film, comprises:

at least one polymer selected from the group consisting of

(i) a polyamic acid obtained by reacting one or more tetracarboxylic dianhydrides with one or more diamines comprising at least one diamine having a structure represented by the following formula (I)



wherein X is a hydrogen atom or a monovalent organic group, and each of Y¹ and Y² is a primary amino group or a monovalent organic group having one primary amino group; and

(ii) a polyimide obtained by cyclodehydration of said polyamic acid;

wherein said rubbed liquid crystal alignment film is capable of aligning said nematic liquid crystal.